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STATEMENT OF WORK  
FOR  
SOLAR EVAPORATION PONDS  
OPERABLE UNIT NO. 4  
INTERAGENCY AGREEMENT  
PHASE I IM/IRA PROGRAM

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE  
GOLDEN, COLORADO

Prepared by  
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March 7, 1995

Revision 6

Approved: BA Troutman

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Not Required per D. A. Ringle

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Date: March 7, 1995

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STATEMENT OF WORK  
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Changes from Revision 4 5 to this Statement of Work are reflected by change bars in the left margin. Additions are indicated by change bars. Deletions are indicated by change bars as well as strikeout lines through the affected text.

## 1.0 OBJECTIVE

The objective of this project is to support a closure strategy in the form of an Interim Measure/ Interim Remedial Action (IM/IRA) Decision Document which shall satisfy the Rocky Flats Interagency Agreement (IAG) and Colorado Hazardous Waste Act Regulations (CHWA). In addition, a "post-closure" care document/application shall be prepared in accordance with applicable RCRA regulations. The post-closure care permit/document shall be designed to monitor the effectiveness of the selected remedial alternative for the Solar Evaporation Ponds. This work shall be performed in direct support of the Rocky Flats Plant (RFP) IAG, signed by the U. S. Department of Energy (DOE), U. S. Environmental Protection Agency (EPA) and Colorado Department of Health (CDH) on January 22, 1991. All work performed under this Statement of Work (SOW) shall comply with applicable laws, regulations, and policies.

The objective of this Statement of Work (SOW)/Program is to provide EG&G with technical support for the Operable Unit 4 (OU 4) hydrogeological characterization efforts. All work/ activities associated with this program shall be in support of the Rocky Flats Interagency Agreement (IAG) signed by the U. S. Department of Energy, U. S. Environmental Protection Agency, and Colorado Department of Public Health and Environment on January 22, 1991. The Subcontractor shall be responsible for evaluating applicable OU 4 data and supporting EG&G relative to planning requirements associated with all hydrogeological field activities.

## 2.0 SCOPE

The following work shall be required to support the IM/IRA Program, Post-Closure Care Monitoring, and the ground water characterization and remediation activities at OU 4:

- 1 ) IM/IRA Technical Consultation
- 2 ) Post Closure ~~Performance and Assessment~~ Care and Monitoring Plan;
- ~~3 ) Post Closure Care monitoring equipment installation (field activities);~~
- 4 ) Direct Project Support for RFI/RI Tasks,
- 5 ) Data Review/Technical Consultation for RFI/RI Field Program,
- 6 ) Technical Support for Field Program Execution,
- 7 ) Final Field Sampling Plan.

The Subcontractor shall be required to support the above tasks as referenced in Section 4.0 of this Statement of Work (SOW). The overall objective of Tasks 1—3 and 2 of the scope of work shall be to close the Solar Evaporation Ponds in accordance with the IAG/Colorado Hazardous Waste Act regulations, and support all applicable requirements associated with post-closure care monitoring and maintenance. The primary emphasis shall be to develop a method to monitor the "effectiveness" of the selected remedial alternative for the OU 4 IM/IRA program. The overall objective of Tasks 4 - 7 of the scope of work shall be to develop a characterization strategy for ground water at OU 4.

### 3.0 BACKGROUND AND APPLICABLE DOCUMENTS

#### 3.1 Background

The Solar Evaporation Ponds (SEP) were first identified as a RCRA regulated unit in the summer of 1986 as part of a site-wide environmental investigation. This investigation was conducted as part of the Comprehensive Environmental Assessment and Response Program (CEARP), and a compliance agreement between DOE and EPA signed on July 31, 1986. In 1989, DOE and the State of Colorado signed an Agreement in Principle (AIP) which required expediting the removal of water and sludge from the Solar Evaporation Ponds. On January 22, 1991 DOE, EPA, and CDH signed an Interagency Agreement (IAG) which defined the Solar Evaporation Ponds as Operable Unit No. 4 (OU 4) and includes specific requirements for investigating and remediating OU 4. Work performed thus far for OU 4, in accordance with the IAG, includes the development of a Phase I RFI/RI Work Plan (EG&G 1992), implementation of the final Phase I RFI/RI Work Plan, and an IM/IRA Decision Document (EG&G 1992). However, this IM/IRA Decision Document, referenced above, was not a Table 6 Milestone or Deliverable, the document was prepared in accordance with the Rocky Flats Plant IAG. The IM/IRA Decision Document identifies the processes associated with storing and remediating ground water collected in the Interceptor Trench System (ITS) located north and hydraulically down gradient of the Solar Evaporation Ponds.

#### 3.2 Applicable Documents

The subcontractor shall utilize the following regulatory documents and any references cited therein while implementing this SOW for OU 4:

EG&G, Rocky Flats, Inc., Final Phase II RFI/RI Work Plan for OU 4! Solar Evaporation Ponds Vol. 1 and Appendices, September 1994.

Rocky Flats Interagency Agreement, January 22, 1991

EG&G, Rocky Flats, Inc., Final Phase I RFI/RI Work Plan for OU 4. Solar Evaporation Ponds Vol. I and 11, January, 1992

EG&G, Rocky Flats, Inc., Technical Memorandum No. 1 To Final Phase I RFI/RI Work Plan. Vadose Zone Investigation. OU 4. December 1992

EG&G, Rocky Flats, Inc., Proposed Interim Measure/Intermedial Action Decision Document for the Solar Evaporator Ponds Operating Unite No. 4., April 1992

EG&G, Rocky Flats, Inc., Annual Report: Sitewide Treatability Studies, March 1992

EG&G, Rocky Flats, Inc., Proposed Interim Measure/Intermedial Action Decision Document for the Solar Evaporation Ponds Operable Unit No. 4, April 1992

EG&G, Rocky Flats, Inc., Historical Release Report for the Rocky Flats Plant, June 1992

EG&G, Rocky Flats, Inc., Background Geochemical Characterization Report, September 1992

EG&G, Rocky Flats, Inc., Draft Environmental Evaluation Working Document for Phase I RFI/RI Work Plan. OU 4, January 1993

U. S. Department of Energy, Rocky Flats Plant, Draft Integration of NEPA, CERCLA, and RCRA for Activities Under the Interagency Agreement at Rocky Flats Plant, June 1992

U. S. EPA, Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final, EPA 540 G-89-004, October 1988

U. S. EPA, Data Quality Objectives for Remedial Response Activities, Development Process, March 1987

U. S. EPA, Data Quality Objectives for Remedial Response Activities, Example Scenario, March 1987

U. S. EPA, Guidance for Data Usability in Risk Assessment, October 1990

U. S. EPA, Risk Assessment Guidance for Superfund, Volume I. Human Health Evaluation Manual. (Part A). Interim Final, EPA 540/1-89/002, December 1989

U. S. EPA, Risk Assessment Guidance for Superfund, Volume II. Environmental Evaluation Manual. Interim Final, EPA/540/1 -89/001, March 1989

U. S. EPA, Ecological Assessments of Hazardous Waste Sites: A Field and Laboratory Reference, EPA/600/3-89/013, March 1989

U. S. EPA, Guideline for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, EPA/540/2-058, December 1989

Code of Federal Regulations. Title 40, Part 265 - Interim Status Standard for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities, July 1990

Code of Federal Regulations, Title 43 Part 11 - Natural Resource Damage Assessments, October 1987 (or latest edition)

#### 4.0 TECHNICAL REQUIREMENTS / TASKS:

##### 4.1 General

The Subcontractor shall provide all materials, personnel, and services required to complete the scope of work indicated in this document. The Subcontractor shall be

responsible for all aspects of the requirements of this SOW, except those sections specifically stated by EG&G. This SOW contains all requirements for preparation of the reports, but does not include reference material, guidance documents, and historical reports, which can be obtained upon request from EG&G. The work shall be performed in such a manner as to ensure that all required data and deliverables are generated and included in the documents specified in this SOW. The data generated shall be based on customary and specified scientific methods and shall be of adequate quality to meet the study objectives and make sound decisions with reasonable confidence. EPA, CDPHE, and DOE comments pertaining to the requirements in this SOW shall also be adhered to in completing the reports.

EG&G intends to implement a field sampling effort at OU 4 as described in the Final Phase II RFI/RI Work Plan. The field effort includes an "observational approach" using field methods and real-time decision-making to fill identified data gaps for the ground water remediation program, as well as installation of permanent ground water monitoring points. The focus of the field effort is to complete the necessary supplemental investigations required to provide a complete database for implementation of the CMS/FS for OU 4. The tasks described below include technical support for the RFI/RI field program in order to ensure that all data required to complete the CMS/FS are collected during the RFI/RI. Explicitly excluded from this SOW is all field work (other than supervision/direction), site management work, and health and safety work associated with the RFI/RI program. The Subcontractor shall assume that all required field work activities, site management and health and safety functions will be provided by EG&G. The Subcontractor shall, however, be required to define their requirements regarding interaction and communication with the Site Management Team during the execution of the RFI/RI field program.

The objectives of the RFI/RI are to; Characterize the surface waters and ground waters of the unconsolidated materials, weathered bedrock and bedrock; Delineate the contribution of ground water contaminants to OU 4 from upgradient sources; Characterize contamination in OU 4 surface and ground water systems; Delineate the extent of ground water contamination; Evaluate mobility characteristics in OU 4 media; Evaluate the ITS effectiveness; Evaluate compliance with ARARs; and Evaluate the Bowmans Pond (Building 774) water system. Tasks identified in this SOW shall directly support some of the objectives for the RFI/RI program.

Following the RFI/RI program, EG&G intends to develop the CMS/FS. The RFI/RI field program is intended as a supplemental investigation with the exclusive purpose of filling data gaps required for completion of the CMS/FS. EG&G currently anticipates that remediation of ground water beneath OU 4 will be required and that remedies for ground water will therefore be evaluated in the CMS/FS.

The project shall comply with regulatory guidance documents, incorporate agency comments from EPA, CDPHE, DOE, and EG&G, and shall require the subsequent approval by the aforementioned parties.

~~The Subcontractor shall be responsible for all aspects of the work in this SOW, except those sections specifically stated by EG&G. This SOW does not include reference material, guidance documents, or historical reports.~~ EG&G shall assist in locating reference material. The Subcontractor may wish to reproduce the reference materials. The data generated shall be based on customary and specified scientific methods and shall

be sufficient and of adequate quality to meet the SOW objectives and make sound defensible decisions with reasonable confidence. EG&G shall make the sole determination as to the adequacy of the work performed by the Subcontractor. The Phase I RFI/RI Report (1994) and Phase II RFI/RI Work Plan (1994) for the Solar Evaporation Ponds (OU 4), and 1993 Annual RCRA Ground Water Monitoring Report (1994) are the primary EG&G references for guidance in the completion of this SOW.

Requirements for the RFI/RI Field Program Support (Tasks 4 through 7) are provided below.

## 4.2 Documents/Tasks

### 4.2.1 Task 1 - Phase I IM/IRA and Technical Consultation

~~The Subcontractor shall provide technical support/technical consultation during the Phase I IM/IRA program. The Subcontractor shall be required to support the following IM/IRA requirements:~~

- ~~• Evaluation of remedial alternatives;~~
- ~~• Selection of a preferred alternative;~~
- ~~• General regulatory support; and~~
- ~~• IM/IRA DD review and comment~~

~~The Subcontractor shall be required to attend regulatory agency meetings and internal EG&G meetings.~~

~~The Subcontractor shall provide technical support/technical consultation during the Phase II Program. The Subcontractor shall be required to support the following requirements:~~

- ~~• Review and comment on the Phase II RFI/RI Work Plan~~
- ~~• Develop an Options Analysis report for the Phase II Program~~

~~The Subcontractor shall be required to provide technical review and comments on various documents generated during the OU 4 IM/IRA program. Specifically, the Subcontractor shall review and comment on a technical document reflecting the disposal of sludge and penderote under the OU 4 IM/IRA engineered barrier. The Subcontractor shall assume that the material/waste being placed under the barrier shall be minimally treated. Also, the Subcontractor shall be required to support EG&G in the resolution of comments pertaining to the OU 4 Post Closure Performance Monitoring Plan.~~

The purpose of Task 1 is to assist in the technical oversight of the OU 4 Phase I IM/IRA. The technical oversight will consist of attending meetings and reviewing technical documents generated from this project.

The Subcontractor shall report costs on Tasks 1.a, 1.b, and 1.c separately from other tasks within the subcontract, and shall provide weekly written project updates (when working on Tasks 1.a, 1.b and 1.c) and monthly budget status reports as required by Section 5.1.2 of this SOW.

Task 1.d is complete. Any additional support for the Phase II Work Plan shall be completed under Task 4 of this SOW.

#### 4.2.1.1 Task 1.a - Technical Meeting Support and Technical Consultation

Weekly project meetings for the Phase I IM/IRA will be conducted with the Colorado Department of Public Health and the Environment, the Environmental Protection Agency, the Department of Energy, and EG&G Rocky Flats, Inc. Attendance at and technical input for these meetings will be required. The project meetings are estimated to continue until December 1995. The Program/Project Manager shall regularly attend the weekly meetings.

The Subcontractor shall prepare for and attend a maximum of five public meetings in support of EG&G Rocky Flats, Inc. and the Department of Energy. This support shall be limited to aspects of the post-closure monitoring plan (Part V of the Phase I IM/IRA).

#### 4.2.1.2 Task 1.b - Review of the Responsiveness Summary

The Subcontractor shall provide a technical review of the Responsiveness Summary which addresses Parts I-IV of the IM/IRA EA DD. The Responsiveness Summary will be prepared by a separate Subcontractor.

#### 4.2.1.3 Task 1.c - Review of Title II Remedial Design

The Subcontractor shall review and provide formal comments on the following documents, which will be prepared by a separate subcontractor:

- 60% Title II Remedial Design;
- 90% Title II Remedial Design.

#### 4.2.1.4 Task 1.d - Phase II Program Support

All Phase II program support shall be provided under Task 4 of this SOW.

#### 4.2.2 Task 2 - ~~Post Closure Performance and Assessment~~ Care and Monitoring Plan

~~Subsequent to the selection of a remedial alternative, the Subcontractor shall be required to develop a post closure performance and assessment document which shall be equivalent to a post closure care monitoring and maintenance permit. This document shall satisfy applicable RCRA Subtitle C requirements relative to closure and post closure criteria.~~

~~The Subcontractor shall submit a 60% Design package, 90% Design package, and Final Title II Design package with the appropriate comment resolution and incorporation of comments based on reviews from EG&G, DOE, CDH and EPA.~~

~~The Subcontractor shall be responsible for the re-design of the OU 4 Post Closure Performance and Monitoring Plan. The re-design shall be based on placing additional waste below the engineered barrier in the form of sludge and/or ponderite. The Subcontractor shall assume that the "footprint" of the barrier shall be modified.~~

The Subcontractor shall provide all materials, personnel, facilities and services required to provide the engineering and design required by this SOW in accordance with requirements listed in the EG&G Rocky Flats Inc. Design Criteria For Engineering and Architectural Services, DOE Order 6430.1A "General Design Criteria", and DOE Order 4700.1, and the EG&G Conduct of Engineering Manual (COEM).

This task describes the development of a post closure performance and assessment document. The post closure performance and assessment document is equivalent to a post closure care, monitoring and maintenance permit which satisfies all applicable RCRA Subtitle C requirements. This task is broken down into two subtasks.

Subtask 2.a, which includes a conceptual level post closure performance and assessment document, shall be prepared as "Part V" of the OU 4 Phase I IM/IRA. Part V will require some integration with Part IV; Conceptual Design.

Subtask 2.b develops the conceptual plan developed in Subtask 2.a to the Final Post Closure Care and Monitoring Plan. The final plan will consist of:

- A minimum 30 year post closure care, maintenance, and monitoring plan, and
- Drawings, specifications, and operating procedures for equipment which will be installed by the Remediation Construction Contractor.

The Subcontractor shall be responsible for performing drawing searches at Rocky Flats Plant or the Federal Center in Lakewood, Colorado as necessary to obtain background information

The Subcontractor shall report costs on Tasks 2.a and 2.b separately from other tasks within the subcontract, and shall provide weekly written project updates (when working on Tasks 2.a and 2.b) and monthly budget status reports as required by Section 5.1.2 of this SOW.

#### 4.2.2.1 Task 2.a - Part V of the IM/IRA EA DD Post Closure Care and Monitoring Plan Review and Revision

The Subcontractor shall provide a written Responsiveness Summary of all written responses to comments received from the public comment period on Part V of the IM/IRA. Responsiveness Summary text shall be in a format which will be satisfactory to the regulatory agencies. After regulatory agency review, the revised Responsiveness Summary shall be "camera ready", and shall be delivered to a separate subcontractor on the date shown in the OU 4 Detailed



Schedule. The Subcontractor shall revise, as required, Part V of the IM/IRA to comply with public and regulatory agency comments from the public comment period.

#### 4.2.2.2 Task 2.b - Final Post Closure Care and Monitoring Plan

The Subcontractor shall develop and present a completed package that explicitly defines all work required to procure and install the final OU 4 post closure care and monitoring system. It is anticipated that the system will be installed by a Subcontractor on a unit price construction contract. The Title II Design construction specifications shall be prepared in CSI format.

The Subcontractor shall prepare government furnished equipment specifications for items of equipment which require long lead times. Equipment specifications shall be in accordance with EG&G Rocky Flats, Inc. Engineering Procedure DES-5, "Specification for Procurement and Construction" found in Appendix 2 of the Conduct of Engineering Manual (COEM).

The Subcontractor shall prepare a Quality Verification Plan (QVP) which shall parallel the Construction Specifications and include final construction quality control tests, conformance testing, laboratory testing, construction procedures, checklists and sequences. The QVP shall identify all QA hold points.

The Subcontractor shall prepare final Component Checkout (CC) and System Operational (SO) Test Procedures for inclusion in the Final Title II Design package. CC and SO Test Procedures shall be approved by the Contractor Technical Representative (CTR).

The Subcontractor shall prepare drawings and specifications associated with the post closure care and monitoring system in accordance with the EG&G COEM.

The Subcontractor shall prepare a project cost estimate in accordance with FE Manual 009 (or current revision), DOE Order 4700.1, and the COEM. The cost estimate shall include estimates for construction labor, equipment, material quantities, the identification of long lead time procurement items, and potential labor or material supply problems. The Subcontractor shall consult with the EG&G Rocky Flats, Inc. Cost Estimating Department for guidance prior to initiation of work on the cost estimate. The cost estimate shall include quantities, unit costs, identification of originating organizations, basis of the estimate, and an explanation of unusually high or low costs.

The Subcontractor shall provide a Design Basis Document which identifies the items listed below:

- General description of work to be performed including a

comprehensive statement of the purpose of the facility, the location, and the overall concept and layout. General arrangement plans and drawings shall be referenced and attached as necessary.

- An explanation and justification of the basis used to establish the size, capacity, and type of equipment for the design. This explanation shall include calculations, equipment specifications, user requirements, applicable codes/regulations, logic used in reaching conclusions, and any other pertinent information as needed to document and justify all aspects and components of the design. The design logic of the system and an overview of why the system was designed as shown shall be included.

The Subcontractor shall provide the Final Design Basis Document, which shall be included in the final Title II Design review package. The Final Design Basis Document shall include the following information:

- A final description of work consisting of a comprehensive statement outlining the purpose of the facility, its location, the overall concept, and layout.
- An explanation and justification of the basis used to establish the size, capacity, and type of equipment for the design. The justification will include calculations, equipment specifications, logic used in reaching conclusions, and any other pertinent information as needed to document and justify all aspects and components of the design.
- A geotechnical investigations report.

The Subcontractor shall deliver to the Contractor Technical Representative one (1) set of labeled 3.5 inch, 1.44 MB or higher density disks containing all "non-drawing" documentation for the project such as typed text, schedules, and cost estimates. The software used and disks shall be 100% IBM compatible. Typed text shall be produced on "WordPerfect" version 5.0 or higher software. All software used for other items shall be subject to CTR approval; general guidelines for such submittals are that all other software shall be industry standard and not specialty software.

One full size, reproducible hard copy of all drawings and specifications shall be provided to the CTR for all reviews. The Subcontractor shall deliver all final drawings to the CTR in both hard copy and in electronic format in the RFETS standard CAD/CAE system format. The Subcontractor shall ensure that the proposed CAD/CAE layering and drafting conventions, library parts, library standards, fonts, etc., are approved by the CTR before starting any CAD/CAE work. The CTR will coordinate the above information with the Engineering Technical Services Department to ensure standardization and compatibility. All drawings shall be in AutoCad, Release 11 or higher, unless otherwise approved by the CTR.

In the event that the subcontract is terminated prior to completion of

the project, the Subcontractor shall provide to EG&G Rocky Flats, Inc., at no additional charge, all documentation relating to the project such as hard copies and CAD/CAE tapes, disks, or other electronic media.

The products of Task 2.b shall undergo a 60% and 90% formal review by the Contractor. The Subcontractor shall prepare a written summary of all comments and resolutions from the reviews using the example comment/resolution form identified in the COEM. The Subcontractor shall provide one typed copy of resolutions for all review comments to the CTR for approval within five (5) working days of receipt of said comments. Review comments and resolutions of comments shall be incorporated into the packages submitted by the Subcontractor.

#### ~~4.2.3 Task 3 Post Closure Monitoring Field Activities~~

~~The Subcontractor shall be required to implement the post closure performance and monitoring document. The Subcontractor shall provide all necessary resources required to perform the field activities, including the following:~~

- ~~• Health & Safety;~~
- ~~• Site management;~~
- ~~• Drilling and equipment installation; and~~
- ~~• Field logistics, etc.~~

~~The Subcontractor shall not be responsible for any horizontal drilling activities associated with the installation of the Post Closure Monitoring and Maintenance field equipment. All negotiated Other Direct Costs (ODCs) and labor hours associated with horizontal drilling shall be eliminated in Revision 4 of this SOW.~~

#### 4.2.4 RFI/RI Support Tasks

##### 4.2.4.1 Task 4 - Direct Project Support for RFI/RI Tasks

Weekly project meetings for the Phase II RI/RFI Work Plan will be conducted with the Colorado Department of Public Health and the Environment, the Environmental Protection Agency, the Department of Energy, and EG&G Rocky Flats, Inc. Attendance at and technical input for these meetings will be required. The project meetings are currently being held and shall continue until September 1995. The Program/Project Manager shall regularly attend the weekly meetings.

The Subcontractor shall review and provide formal comments for the following documents:

- Phase II RI/RFI Work Plan.

The Subcontractor shall attend meetings with EG&G project team

members and DOE and regulatory agency personnel as required by the EG&G Project Manager/CTR. The Subcontractor shall assume that two technical project meetings per month shall be required plus one project management update meeting per week for the duration of the project. Additional meetings may be required; all meetings and attendees shall be approved by the EG&G Project Manager/CTR. (It is intended that meetings and technical support called for in this task represent a follow-on to that which is called for in Subparagraph 4.2.1.1.) The Subcontractor shall be responsible for preparation of meeting minutes to document all meetings. Meeting minutes shall be submitted to the EG&G Project Manager/CTR no later than ten (10) working days from the date of the meeting. The Subcontractor shall also prepare periodic status and update documents for submittal to EG&G as described in Section 5.0.

All deliverables and transmittals to EG&G shall also be provided by the Subcontractor in electronic format. The formats provided shall be compatible with EG&G computer systems as directed by the EG&G Project Manager/CTR. Acceptable formats may include WordPerfect for text, ASCII for data, and AutoCad for maps.

EG&G may supply the Subcontractor with some of the equipment that shall be required for the performance of this subcontract. Availability of equipment or services may vary; requirements should be made to the CTR in writing ten (10) working days in advance of the date the equipment is needed.

#### 4.2.4.2 Task 5 - Data Review/Technical Consultation for RFI/RI Field Program

The Subcontractor shall provide technical consultation, including review of all applicable data and documents relevant to the definition of data requirements for the CMS/FS for OU 4. The applicable data sources and documents shall include, but not be limited to:

- OU 4 Phase I RFI/RI Report;
- annual RCRA ground water monitoring reports;
- the RFI/RI Work Plan; and
- the RFEDS database.

The data evaluation subtask shall focus on the data requirements for the CMS/FS for OU 4, and the results of the data analysis shall include data elements required to complete the necessary database for the CMS/FS (i.e., identification of data gaps). The Subcontractor shall review the RFI/RI Work Plan and make recommendations for changes, additions, or deletions from the field program in order to ensure that all data gaps are filled. An initial (baseline) summary of the data gaps identified and recommended modifications to the field program shall be submitted to EG&G in writing.

#### 4.2.4.3 Task 6 - Technical Support for Field Program Execution

The first portion of the RFI/RI field program to be conducted by EG&G involves the use of field methods to develop an understanding of the hydraulics of the surface water and ground water systems at OU 4 and to delineate the nature and extent of ground water contamination. The field methods to be employed by EG&G include, but are not limited to:

- hydraulic characterization of surface water and ground water systems;
- sampling and field analysis of surface water and ground water in and around OU 4;
- geophysical investigations;
- ground water sampling in the Rocky Flats Alluvium using geoprobe equipment;
- installation of and field analysis of samples from bedrock wells.

The intent of this portion of the field program is to use field methods and real-time analyses to direct field activities using an "observational approach". The Subcontractor shall provide decision-making in the field to direct field activities in real time and to ensure that all identified data gaps are filled. The Subcontractor shall be required to provide all necessary personnel and materials to evaluate real-time data collected in the field during this portion of the RFI/RI field program, and to provide decisions on a real-time basis to direct the field activities. These activities shall include, but not be limited to:

- startup meetings and periodic update meetings as necessary to identify objectives and to disseminate relevant information to all field personnel;
- Plan of the Day (POD) meetings each working day, or as required, during implementation of the field program to direct field activities for the day;
- technical support for each field program (e.g., geophysics, geoprobe) as required to direct, on a real-time basis, ongoing activities;
- data compilation, decision, and disposition approaches;
- daily review meetings, during which the data collected that day shall be added to the baseline and data gaps re-evaluated to direct the next day's activities;
- definition and regular updates of short-term, mid-term, and long-term data collection goals for each field program (e.g., geophysics, geoprobe);
- daily communication of upcoming site management needs (e.g., utility clearances, access requirements) to the Site Manager to avoid logistical obstructions.

The Subcontractor shall be responsible for directing field activities (e.g., sample locations and depths, required analyses, geophysical survey types and line locations) to ensure that all identified data gaps

are filled.

The Subcontractor shall identify all site management, equipment, sampling, and analytical needs in advance and shall communicate those needs to the Site Manager. The Subcontractor shall not be responsible for procurement of equipment, utilities clearances, or access to specified areas or for the provision of expendable supplies or health and safety services.

#### 4.2.4.4 Task 7 - Final Field Sampling Plan

It is EG&G's intent that, following the data review/technical consultation for RFI/RI Field Program (Task 5), and the "observational approach" ~~field-directed~~ portion of the RFI/RI field program, final sampling locations of permanent monitoring wells for ground water, surface water, sediments and surface soils will be negotiated with CDPHE and EPA. The purpose of these wells will be to confirm the database developed during the first portion of the field program and to provide sampling points for some period of time to continue monitoring any movement of ~~ground-water~~ contamination (temporal monitoring). The installation and sampling of these wells is explicitly excluded from this scope of work. However, the Subcontractor shall provide all personnel and materials required to support EG&G in presenting the results of the "observational approach" and the resulting conceptual model of ground water flow and contamination at OU 4 to CDPHE and EPA. The Subcontractor shall also develop the Final Field Sampling Plan including locations for permanent monitoring wells, the justification for those locations, and the proposed monitoring program.

### 5.0 DELIVERABLES/SCHEDULE:

#### 5.1 General Reports Data Requirements

The following reports and data are required for all tasks detailed in this SOW for Operable Unit 4, Solar Evaporation Ponds:

##### 5.1.1 Project Reports

Weekly projects updates shall be submitted to the EG&G Project Manager/CTR no later than 11:00 A.M. on the last working day of each week.

Weekly Status Meetings shall be conducted for the duration of the contract with EG&G's Project Manager/CTR. These Meetings will include any accomplishments or problems that occurred during the previous week as well as the current and future status of the project. However, should a problem arise, the Subcontractor must contact the EG&G CTR immediately.

##### 5.1.2 Budget Reports

Budget Status Reports shall be completed by the Subcontractor and submitted to

the Project Manager/CTR, by the 10th day of the following month for the current month's activities. Three ~~Two~~ status reports shall be generated each month; one reflecting current period funding, one reflecting the Fiscal Year (FY) allocated funding and one ~~the other~~ reflecting cumulative negotiated funding. The report(s) shall be based on actual costs incurred. All budget/status report(s) shall include earned value statements that will detail the following:

- Budgeted Cost of Work Performed for the period and fiscal year (BCWP);
- Actual Cost of Work Performed for the period and fiscal year (ACWP);
- Budgeted Cost of Work Scheduled for the period and fiscal year (BCWS); and
- Cumulative costs to date for the above items; and
- Estimates to Complete (EAC)

Variance values shall be calculated for the above comparing actual costs versus budgeted costs and work scheduled (BCWS) versus work performed (BCWP). Values are calculated as  $((BCWP - ACWP) \times 100) / BCWP$  and  $((BCWP - BCWS) \times 100) / BCWS$ . If these variances exceed +/- 10% for a cumulative value or +/- 20% for a monthly value, the Budget Status Report shall detail the reasons for the variance and the corrective action to be implemented. The variance reports shall include the current monthly variance report as well as a fiscal year to date ~~cumulative~~ variance report. All calculations shall be completed and reported for the current month and for the year. Budgeted costs for work shall be based upon Milestone and activity schedule.

#### 5.1.3 Invoices

Copies of Subcontractor invoice/purchase documents (vendor) shall be submitted with Subcontractors' signature. This pertains to any documentation to verify procurement. The Subcontractor shall ensure daily accounting of personnel, contractors, materials and supplies procured under this contract.

#### 5.1.4 Master Schedule

A master schedule shall be submitted within 15 working days from subcontract award. The Subcontractor shall develop a comprehensive and detailed Master Schedule which shall integrate all tasks in this SOW. The schedule shall be presented in Gant and Pert chart format. The schedule shall be presented on a Fiscal Year basis.

#### 5.1.5 Staffing Plan

A detailed Staffing Plan (including personnel names and resumes) shall be submitted 10 days from contract award in the form of an organization chart.

#### 5.1.6 Meeting Minutes

The Subcontractor shall be responsible for attending meetings with EG&G project team members and/or regulatory agency personnel. The Subcontractor shall be responsible for participating in meetings concerning any logistical coordination. The Subcontractor shall prepare meeting minutes to document all

meetings with EG&G project team members and agency personnel. The typed meeting minutes are due to the EG&G Project Manager within one week of the meeting date. The Subcontractor shall use an appropriate electronic format such as WordPerfect for text, ASCII for data, LOGGER for log data and AUTOCAD/GIS for maps. The Subcontractor shall obtain approval from the CTR for any uncertain electronic format decisions. Both a hard copy and an electronic copy (3-1/2" disk) shall be submitted to the EG&G project manager. Project management meetings other than these detailed may be required. Meetings and attendees shall require approval by the EG&G Project Manager.

## 5.2 Phase I IM/IRA Process Reports/Data Requirements

### 5.2.1 IM/IRA Process

The following reports and data are required for the Phase I IM/IRA program:

Post Closure ~~Performance and Assessment~~ Care and Monitoring Plan:

Roundtable -- ~~February 21, 1994~~ Complete  
Draft Proposed -- ~~May 16, 1994\*~~ Complete  
Proposed -- ~~July 25, 1994\*~~ Complete  
Draft Responsiveness Summary -- ~~December 1, 1994\*~~ May 2, 1995  
Final Part V IM/IRA EA DD and Responsiveness Summary -  
~~February 13, 1995\*~~ August 10, 1995

~~\*Subject to change due to ongoing discussions with EPA and CDH~~

Post Closure ~~Performance and Assessment~~ Care and Monitoring Plan Title II Design

60% Design Work Package - ~~TBD~~ March 13, 1995  
90% Design Work Package - ~~TBD~~ May 26, 1995  
Final Title II Design work package - ~~TBD~~ December 4, 1995

~~Post Closure Monitoring Equipment Installation:~~

~~October 1995 - September 1996~~

### 5.2.2 RFI/RI Program Support

Final Field ~~Monitoring~~ Sampling Plan

Preliminary Draft - ~~January 24, 1995~~ May 8, 1995  
Draft - ~~February 3, 1995~~ May 30, 1995  
Final - ~~February 14, 1995~~ July 10, 1995

Baseline Summary Report

Draft - TBD  
Final - TBD



### 5.2.3 Report Review

The Subcontractor shall provide a 30% and 60% completion update presentations to EG&G, DOE/RFO, EPA, CDH, and any other group approved by EG&G. The Subcontractor shall present working maps, preliminary data, preliminary findings, etc. as approved by the Project Manager.

### 5.2.4 Transmittal

Transmittal of all documents to EG&G must have a written record of memos, meeting minutes or transmittal letter. Electronic copies of the final document (text and figures) shall be provided to EG&G on software compatible with that available at EG&G/RFP. Complex figures shall be in color to provide clarity. Photographs shall be used where appropriate.

## 6.0 QUALITY ASSURANCE (QA) REQUIREMENTS:

Work performed under this SOW is governed by the EG&G Environmental Restoration (ER) Quality Assurance Project Plan (QAPjP). The ER QAPjP complies with the requirements of EPA QAMS-005/80 and DOE Order 5700.6B which addresses ASME NQA-1.

The supplier shall perform all work in accordance with EG&G Quality Assurance program requirements. All work shall be performed under the cognizance of the responsible EG&G organization and in accordance with approved EG&G implementing procedures, or supplier procedures which have been approved by the responsible EG&G organization prior to the start of any work. The responsible EG&G organization shall review and approve all work in accordance with applicable implementing procedures.

The Subcontractor shall comply with the following fundamental Quality Assurance (QA) requirements relevant to this SOW are listed below.

### 6.1 Quality Assurance Quality Control

#### 6.1.1 Organization

The authority and responsibilities of persons or organizations performing work under this statement of work shall be established, documented and submitted to EG&G ER. An organization chart identifying specific individuals by name, supported by itemized authorities and responsibilities is a suitable means of documentation.

#### 6.1.2 Personnel Qualification

Personnel performing technical work shall receive training and indoctrination in accordance with 3-21000-ADM-2.02 to applicable procedures, to assure proper understanding of the QA and technical requirements of this SOW before beginning work. In addition, written personnel qualification requirements shall be established for all positions performing technical work. Documented evidence of personnel training, training materials, qualification requirements, and qualifications shall be maintained and made available to EG&G for review

upon request. EG&G will provide training for Quality Assurance and technical procedures.

#### 6.1.3 Design and Control of Scientific Investigations and Processes

Activities involving the performance of technical design, environmental sampling, characterization, and/or remediation shall be reviewed, documented, and approved by EG&G ER. All processes shall be performed to EG&G ER approved and controlled procedures or work plans except where excluded in writing by EG&G. Examples of processes include physical sampling, handling/shipping/ storage, experiments, tests, and data analysis (e.g., software). Documentation describing the process, and products resulting from the process (e.g., data and technical reports) must be established well enough for process reproduction (by independent peers).

#### 6.1.4 Control of Purchased Items and Services

Items or services procured under this subcontract shall be performed in accordance with the requirements of the QAPJP, including retention of receipts, contracts, and any other documentation related to the integrity of the purchased product or service.

#### 6.1.5 Document Control

The Subcontractor shall acknowledge receipt of, and manage, EG&G plans and procedures in accordance with EG&G procedure number 3-21000-ADM-06.01.

#### 6.1.6 Identification and Control of Equipment/Items

When applicable, the Subcontractor shall ensure that correct and accepted items are used and that they are traceable through unique identifiers. Procedures describing the process shall be submitted to EG&G for approval. Activities in which personnel use measuring and test equipment shall be controlled in accordance with EG&G procedure number 3-2100-ADM-12.01. Such devices shall be controlled, calibrated, and maintained at predetermined intervals (established by the Subcontractor and approved by EG&G) to ensure acceptable performance.

#### 6.1.7 Control of Non-Conforming Items

Identification and disposition of non-conforming items and services shall be performed in accordance with EG&G procedure 3-21 000-ADM-15.01. The control of non conformances shall apply to all components and processes of programmatic and physical systems.

#### 6.1.8 Corrective Actions

Activities that identify, rectify and preclude recurrence of conditions adverse to quality shall be conducted in accordance with EG&G procedure number 3-21000-ADM-16.01.

#### 6.1.9 Inspection and Assessment

Quality affecting activities are subject to inspection and assessments by EG&G. These assessments will be performed in accordance with EG&G procedures (e.g., 3-2100-ADM-10.01 and/or -ADM-18.02). The Subcontractor's work place and working records shall be accessible during normal working hours for verification or audit by EG&G or their representatives, during the performance of this contract. All completed records shall become the property of EG&G and shall be turned over to EG&G no later than sixty (60) days following the completion of the technical work.

#### 6.2 Miscellaneous

The supplier shall perform all work in accordance with EG&G Quality Assurance program requirements. All work shall be performed under the cognizance of the responsible EG&G organization and in accordance with approved EG&G implementing procedures, or supplier procedures which have been approved by the responsible EG&G organization prior to the start of any work. The responsible EG&G organization shall review and approve all work in accordance with applicable implementing procedures.

The supplier shall not be permitted to:

- (1) Provide any safety-related items without prior inspection and acceptance by EG&G Quality Assurance organization.
- (2) Perform any special processes such as welding, NDE, heat treatment, plating, etc., for which acceptance is based on supplier-furnished personnel qualifications or other quality assurance criteria.
- (3) Perform inspections or tests of equipment or components for the purpose of determining final acceptance by EG&G, except for those inspections and tests conducted in accordance with approved EG&G implementing procedures or supplier procedures which have been approved by EG&G. All such inspections and tests shall be performed using measuring and test equipment verified and authorized by the Rocky Flats Metrology Lab. All work shall be performed under the direct supervision of EG&G, and witnessed by qualified EG&G personnel.

#### 7.0 SECURITY/BADGING REQUIREMENTS

Routine/daily access shall be required into the RFP Protected Area (PA), and specifically, the Solar Evaporation Ponds (SEP's) OU 4. This shall require all field personnel to obtain an "L" or "Q" clearance. The "Request for Proposal" (RFP) shall include all pertinent forms/documentation required to obtain the appropriate clearance for general access to the SEP's. The award of these tasks should coincide with the award of the clearances to maintain progress and efficiency.

In the event that the Subcontractor's FOCI has not been approved at the time of the award of the contract, then uncleared persons performing work in the Protected Area will be accompanied by escorts, provided by EG&G, in accordance with the Rocky Flats Plant Project Security Plan (GSP-005-Rev. 02).

## 8.0 CHEMICAL REPORTING NOTIFICATION REQUIREMENTS

Prior to the transportation of any chemicals to the RFP site, the chemical Tracking and Control Systems Division of Environmental Protection as well as the CTR shall be notified. CT & CSD will inform the Subcontractor of appropriate procedures for tracking the type, quantity, storage, movement, use and final disposition of chemicals at RFP. The Subcontractor shall be responsible for managing the chemicals in accordance with EG&G procedures.